




# Renewable Energy Investments for Pension Plans

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## Energy and Materials Represent an Increasingly Important Investment Opportunity

- In 1980, energy and materials stocks comprised fully 1/3 of S&P500 capitalization
- By Year-end 2000, these sectors accounted for less than 8% of the S&P500
- Today, these sectors account for 12.5%
- Within a decade, we expect this percentage to exceed 20%



# Key Renewable Energy Investment Opportunities for CalPERS

- Private Equity
  - Clean Technology Program
- Public Equity
  - Developers of renewable energy technologies
- Real Estate
  - Greenwave Initiative
- Fixed Income
  - Debt financing of projects and companies dedicated to renewable energy technologies
  - Provide credit enhancement for qualified municipal utility projects



# CalPERS Fixed Income

## *Credit Enhancement Program*

### Summary:

- February 2003: CalPERS Investment Committee approved a \$5 billion nationwide Credit Enhancement Program
- The Program's primary objective is:
  - To earn fee income on an expected zero loss underwriting basis by supporting municipal infrastructure development throughout the United States
- Viewed as an opportunity for CalPERS to generate incremental income by monetizing CalPERS' existing liquidity and AAA program rating

The current credit exposure for the program is approximately \$550 million, which includes two California Department of Water Resources power supply revenue bonds totaling \$150 million in commitment

For further information on CalPERS Credit Enhancement Program, please contact Dan Kiefer or Anny Chen at (916) 795-3400.



# CalPERS AIM Environmental Technology

## Summary:

- March 2004: CalPERS Investment Committee approved a \$200 million special private equity allocation to invest in “CleanTech” opportunities
- Program objectives were established as:
  - *Primary Objective:*
    - Attractive, long-term, risk-adjusted investment returns
  - *Secondary Objective:*
    - Catalyzing adoption of clean technologies in the broader marketplace, a cleaner environment for the generations to come, and job creation in a new emerging industry
- Viewed as an opportunity for CalPERS to generate attractive investment

To date, \$200 million has been committed to private equity funds that have all met the financial and environmental profile of the program



# CalPERS AIM Environmental Technology

*Structure:*

CalPERS AIM Staff		
Pacific Corporate Group	Anchor Advisor	<ul style="list-style-type: none"><li>■ Program Policies &amp; Procedures</li><li>■ Investment Strategy</li><li>■ Annual Plan</li><li>■ Portfolio Construction</li><li>■ Deal Sourcing</li><li>■ Pipeline &amp; Forward Calendar</li><li>■ Due Diligence</li><li>■ ECG Oversight &amp; Implementation</li><li>■ Legal Negotiations</li></ul>
Environmental Capital Group (ECG)	Sub-Advisor	<p>Works closely with PCG to develop &amp; implement:</p> <ul style="list-style-type: none"><li>■ Environmental Due Diligence</li><li>■ Environmental Monitoring</li><li>■ Environmental Reporting</li></ul>

# CaIPERS AIM Environmental Technology

*"CleanTech" Defined:*

## *Description*

<i>CleanTech</i>	Solutions that are more efficient and less polluting than existing products, services or technologies
<i>More Efficient</i>	Recycling, repurposing or reducing the quantity of natural resources used
<i>Less Polluting</i>	Reduction of emissions refuse and contaminants in the air water and land

## *Sub-Sectors*

<u>Clean Energy</u> Geothermal Hydro Wind Solar Biomass Clean coal Wave / tidal Microturbines Landfill gas	<u>Clean Technology</u> Nanotechnologies Emissions controls Air filtration Water purification Advanced materials Pollution control Power storage Fuel Cells Waste management Recycling Transportation Battery storage Energy efficiency Phytoremediation Sensors Real time metering
<u>Clean Fuels</u> Bio-diesel Ethanol Cellulosic ethanol Hydrogen	



# CaIPERS AIM Environmental Technology

## *Market Drivers:*

*Trends are favoring Clean Energy & Technology investments*

### *Energy Market Conditions*

- High and volatile prices
- Increasing demand for cleaner energy & fuel production capacity
- Domestic energy supply vulnerability & security
- Constraints regarding fossil fuel supplies
- Dependence on unstable countries for oil and gas imports

### *Environmental Concerns*

- Increasing awareness of risks and investment opportunities related to climate change
- Inefficiency of domestic energy generation infrastructure
- Emerging markets growth creates threat of accelerated environmental damage

### *Public/Corporate/ Government Awareness*

- Acceleration of pro-Clean Energy federal & state energy policies and regulations
- Dependence on Middle East for energy needs is viewed as National Security issue
- Introduction of high profile corporate strategic initiatives
- Public interest on the rise





# CalPERS AIM Environmental Technology

*Strategy:*

## Diversification

Broad and flexible investment approach reflecting the diversity of opportunities with environmental benefits

## Prudence

Patient investment approach to growing market opportunity

## Institutional Investment Process

Combining traditional investment analysis with new environmental screening tools

## Return Expectations

Investment returns commensurate with risk-adjusted returns of the overall asset mix

# CalPERS AIM Environmental Technology

## *Current Portfolio:*

Strategic Partner	Fund Size** (\$MM)	CalPERS Commitment (\$MM)	Strategy
Carlyle Riverstone Renewable Energy Infrastructure Fund I, L.P.	\$690	\$60	Buyout
Draper Fischer Jurvetson (DFJ) Element, L.P.	\$275	\$30	Diversified Venture Capital
Enertech Capital Partners III, L.P.*	\$250	up to \$15 (pending, not public)	Early Stage Venture Capital
NGEN Enabling Technologies II, L.P.*	\$150	up to \$15	Early Stage Venture Capital
Paladin Private Equity Investors, L.P.*	\$200	up to \$40	Expansion Capital
Rockport Capital Partners II, L.P.	\$263	\$15	Diversified Venture Capital
VantagePoint CleanTech Partners, L.P.	\$150	\$25	Diversified Venture Capital

\* Funds that are still in the market and have a commitment from CalPERS linked to final fund size

\*\* Refers to target fund size for those funds still actively fundraising